North Idaho College:
Soaring to Success

TAACCT Evaluation Final Report

Summary of evaluation activities conducted and project accomplishments from June 2013 to 2016.

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Executive Summary

I. TAACCCT Program/Intervention Description and Activities [0.5 page]

The United States Department of Labor (USDOL) initiated the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program in 2011. North Idaho College (NIC) in Coeur d'Alene, Idaho received a Round 2 TAACCCT award for their *Soaring to Success* project (*Grant Number: TC-23774-12-60-A-16*) in October 2012. This program focused on increasing the education and skill attainment of TAA-eligible veterans and other dislocated workers for employment in the aerospace industry in northern Idaho. The Aerospace department has introduced several different programs including: Computer Numerical Control (CNC) Mill Operation, Aerospace Composite Fabrication, Nondestructive Testing and Inspection, and Aviation Maintenance. Key elements of the program include accelerated learning strategies and hands-on learning. The first cohort of students in the program began coursework in the Fall 2013 semester.

Faculty developed program-related courses and existing courses were specifically redesigned to better meet employer and student needs including traditional classroom, online, and hybrid formats. Both mathematics and English in context courses were developed for the Aerospace Program; only the mathematics course was developed using grant funds. Course curriculum was continually evaluated; adjustments were made when necessary. The Aerospace Program was also augmented by the implementation of the I-BEST component, in which two instructors taught side-by-side. Within the I-BEST model, one instructor teaches professional/technical or academic content, the other instructor provides support for basic skills in reading, mathematics, writing, or English language. Other services provided to program participants by the Recruiter/Placement coordinator included:

- Information on how to create a professional electronic profile,
- Participation in mock interviews,
- Résumé development,
- Tutorials on job hunting, and
- Referrals to Career Services at NIC.

II. Evaluation Design Summary [0.5-1 page]

The program's comprehensive evaluation plan was informed by current research, integrated into all components of the *Soaring to Success* project, and was designed with the rigor and complexity needed for meaningful assessment of a TAACCCT project. The plan was aligned with the *Soaring to Success* goals, objectives, and anticipated outcomes, as well as the USDOL guidelines for project assessment and evaluations. Components of the evaluation plan included: 1) assessment of the project implementation and process; 2) qualitative assessment of the project-specific learning outcomes and program components; 3) assessment of program outcomes based on DOL quantitative metrics; and 4) formative feedback to inform the project partnership.

Evaluation activities were guided by the following evaluation questions:

- How were programs and program designs developed/modified during the grant period?
- How were institutional policies and procedures impacted through the implementation of the grant?
- How has the program developed partnerships?
- How has the program implemented professional development opportunities?
- How has the program implemented student support services?

Qualitative and quantitative project-specific evaluation methods included: 1) participant surveys regarding program participation and satisfaction; 2) employer/stakeholder surveys and interviews regarding the training program, work readiness of students, and overall program collaboration; 3) faculty feedback regarding professional development and program components; 4) document analysis; and 5) staff and college stakeholder interviews to assess components of the program as determined through the logic model and evaluation design process.

OEIE created a logic model for NIC that could be used as a planning tool, to clarify and graphically display what the project intended to do, and to describe anticipated accomplishments and impacts. Throughout the implementation period, the logic model was revised and updated to reflect the evolution of the programs. The initial strategies remained constant through the grant period, and the medium-term outcomes were achieved.

A benchmarking analysis was conducted on the TAACCCT program participants compared to students in other Technical Education programs at NIC. Employment and wage data were only available on a very limited basis, documented through case notes by the project staff for participants in the program. As such, it was not possible to conduct a more comprehensive impact analysis. Due to this lack of employment data, the outcomes analysis for the *Soaring to Success* focused on a descriptive benchmark between Aerospace Program and the cohort group.

The analysis is used to demonstrate the level of performance or success of the *Soaring to Success* program participants in comparison to similar NIC students. NIC project and college staff, as well as OEIE targeted two technical programs at the college, the Machining and CNC Technology and Welding Technology during Fall 2013 (*N*=32), as the comparison group. The participant and benchmark groups share similar technical fields of study and length of program towards the acquired credentials. Other parallels between the Aerospace Composites Technology and technical programs include the core skills and abilities, as well as job demands for program completers.

III. Implementation Findings [1-1.5 pages]

Based on the evaluation data collected, the following highlights of successes and challenges are presented below.

Successes

- Industry partners have been involved in all aspects of program design and curriculum development. The Idaho Aerospace Alliance Group and the Advisory Committee were

identified as key assets to the program. Industry partners have been helpful in providing input, as well as the review and approval of the program curriculum.

- Program delivery includes traditional classroom, online, and hybrid instruction. Prior to grant-funding, Professional Technical Education (PTE) courses at NIC were not delivered through online or blended learning.
- Due to the hands-on nature of the courses, the program looked at ways to expand their reach in the region. NIC was able to establish an off-site training location in Summer 2015, with an employer partner's employees hired as an adjunct instructor through the college to provide training in their facility in the evenings.
- Currently, eight courses are being offered online, allowing students greater flexibility in scheduling and access to materials. Classes have been offered online, and can reach students throughout the state of Idaho. Allowing high school enrollment has had a positive impact, as it serves as a recruiting tool for the program.
- Services provided to program participants by the Recruiter/Placement coordinator include: information on how to create a professional electronic profile, participation in mock interviews, résumé development, tutorials on job hunting, and referrals to Career Services at NIC.
- Continued involvement of industry partners in the process of course refinement helps to make the classroom learning relevant to real-world employment opportunities. Several area employers invite program participants to tour their facilities providing the chance for program participants to see processes outside of the classroom.
- Industry partners and the advisory board have also contributed in terms of identifying and advising programs of job openings and potential programs; indeed, certain industries will provide higher wages and preference for program completers. Several area employers have offered facilities tours to program participants.
- Industry partners, such as Aerocet, AGC Aerocomposites, and Lockheed Martin, have continually donated a considerable amount of materials and equipment. These donations allow for more frequent labs, and save program participants on material costs and fees associated with labs.
- Partnerships and relationships allow NIC to leverage resources in an effort to increase sustainability. Based on the Aerospace Program's current success, NIC has been engaged in discussions with the state office of PTE to explore options for sustaining the program. Industry partners, the Department of Labor, and NIC administration, beyond CTE, have been advocates of the program.
- The development of strong industry partnerships has provided NIC with a model for developing programs to serve other industries in the region (e.g., forestry, advanced manufacturing not related to aerospace). For the past decade, northern Idaho has been home to aerospace industries, which will likely lead to increased need, therefore program sustainability.

Challenges

- One cause for program modification was the introduction of the Aviation Maintenance program. As noted by project staff and administrators, they underestimated the intricacies of the FAA regulations and the financial outlay needed to meeting those strict regulations. Working with the regulations imposed by the FAA slowed the roll out process for the program.
- NIC, like many other institutions of higher learning, runs on a semester system, which limited the ability for open-entry/open-exit modular curriculum and program offerings within the PTE division. The Aerospace Program intended to offer courses using an open-entry/open-exit model; however, it was determined fairly early that this would not be feasible.
- North Idaho College, like many other grantees, had difficulty in accessing employment and wage data, making it very challenging to track program outcomes.

IV. Participant Impacts & Outcomes [1-1.5 pages]

Another component of the project evaluation was the outcomes/impacts analysis. The objective for this assessment was to understand the impact of the *Soaring to Success* project on student participants in terms of training and employment outcomes, compared to students not served by the grant program.

- Over the three year grant-funding period, including the extension period, 132 unique participants were served by the Aerospace Program at North Idaho College.
- The total number who completed a grant-funded program of study was 85, including 39 incumbent workers that have completed a grant-funded program of study.
- The total number of participants retained in their program of study or other grant-funded programs were 11. An additional 15 were retained in another education program or programs. These values are not cumulative and only represent values for Year 4.
- A total of 3,719 credit hours were completed by 132 participants, resulting in 385 degrees or certificates earned. The total number of participants earning certificates in less than one year was 84, the total number of participants earning certificates in greater than one year was 26, and the total numbers of participants earning degrees were seven. The data collected from the Aerospace Program participants demonstrate the high levels of retention. Program participants earned from 1 to 7 certificates, with an average of 4.4 certificates earned by each participant.
- More than one-half of the program participants served by the Aerospace Program (*n*=76, 57.6%) were employed. This includes 61 incumbent workers served by the TAACCCT program at NIC.
- Employment and wage data were only available on a very limited basis, documented through case notes by the project staff for participants in the program. In an effort to provide an accurate value for increased wages for program participants, OEIE subtracted the original wage reported from the new wage reported, where possible. Participants were only

included in the wage calculation if they had both original and new wage data. As well, if a program participant was identified as unemployed to begin the program, but is now employed, the original wage was determined to be $0.00; average wage increase for program participants is $5.72.

V. Conclusions [0.5 pages]

Based on the successes and challenges faced during the program as well as effective practices that have been put in place, the NIC TAACCCT program identified the following lessons learned:

- When writing a grant, it would be helpful to examine the scope of the process. That is, focus on one or two brand new programs, rather than try to get five new program areas up and running.
- It would be beneficial to focus on planning and curricular development during the first year of grant-funding, and implementation of courses during the second year of grant-funding.
- It is important to plan for growth of a program in terms of infrastructure, facilities, etc.
- In general, it is assumed that a 3-year timeframe is not long enough to assess the impact of the program on industry. It is important to think about long-term ways to collect this impact.
- Partnerships are key to fully develop and expand programs. This includes looking across the institution to see where efficiencies can be identified, as well as working with external partners.
- Understand employer demand in the local region and design a program that matches demand. Think ahead, and look for a broad range of industry partners, so that program is not too narrow. As one stakeholder explained, *"I think it's important to have a program that has structure and has also a vision and is also relevant to the area that you're in. And I think that's what this program has. Because there is quite a bit of aerospace going on in the area – it's amazing how much there is when you get involved. And that's a thing I wouldn't change. I'd make sure that it was relevant to the local needs of the community."*
- Employment and wage data are important for documenting outcomes and impact. Many community colleges experienced difficulty in accessing these data. Ongoing collaboration and discussion between the US Departments of Education and Labor, among others, will be important in addressing this issue.
- Ongoing discussions at the federal level about financial aid will also be important for future programs. At the beginning of this grant cycle, short term training programs were not eligible for federal financial aid. Although policies are changing, continued work of this issue will be important to ensure working adults and students interested in short term training have access to necessary resources.

Introduction

The United States Department of Labor (USDOL) initiated the Trade Adjustment Assistance Community College and Career Training (TAACCCT) program in 2011. A second round of funding was made available in 2012 to eligible institutions of higher education, with the purpose of expanding or improving their ability to deliver education and career training programs that can be completed in two years or less. As described in the Solicitation for Grant Applications (SGA), these programs were to be designed to operate in conjunction with the Trade Adjustment Assistance (TAA) for Workers Program, helping TAA-eligible workers and other adults succeed in obtaining the skills, degrees and credentials needed for high-wage, high-skill employment while also meeting the needs of employers for skilled workers.

North Idaho College (NIC) in Coeur d'Alene, Idaho received a Round 2 TAACCCT award for their *Soaring to Success* project (*Grant Number: TC-23774-12-60-A-16*) in October of 2012. This program at NIC focuses on increasing the education and skill attainment of TAA-eligible veterans and other dislocated workers for employment in the aerospace industry in northern Idaho. Over the course of the grant-funding period, the Aerospace department has introduced several different programs including: Computer Numerical Control (CNC) Mill Operation, Aerospace Composite Fabrication, Nondestructive Testing and Inspection, and Aviation Maintenance. Key elements of the program include accelerated learning strategies, student support services and developing industry partnerships. The first cohort of students in the program began coursework in the Fall 2013 semester.

As part of the requirements from the USDOL, the college released a Request for Proposals (RFP) in June 2013 to obtain the services of a third-party evaluator. Through this process, the Office of Educational Innovation and Evaluation (OEIE) at Kansas State University was selected as the third-party evaluator for this TAACCCT project. Over the last three years, OEIE has provided quarterly evaluation summary reports to NIC, collecting and analyzing feedback from project staff, faculty, participants, employers and college administrators to: monitor program processes; document the evolution of relationships with external partners, such as employers, and internal partners within the college; help keep the project on track operationally; and to document strategic components of the program. This ongoing feedback was also used to adjust and improve the evaluation process over the course of the project.

This final evaluation report provides a summary of the implementation of the aerospace programs of study (POS) and strategies used by NIC over the course of the TAACCCT grant. The report addresses the evaluation questions that guided the evaluation activities, along with a description of the benchmarking analysis conducted to capture program outcomes. In addition to the narrative, the report also consists of a number of appendices that include the updated project logic model; timelines of major project milestones and evaluation activities (previously reported and updated versions with new data); the project work plan by priority, strategy and deliverable; maps representing the Aerospace Program participant hometowns and industry partner cities; and an infographic representing the TAACCCT participants.

Evaluation Process

The program's comprehensive evaluation plan was informed by current research, integrated into all components of the *Soaring to Success* project, and was designed with the rigor and complexity needed for meaningful assessment of a TAACCCT project. The plan was aligned with the *Soaring to Success* goals, objectives, and anticipated outcomes, as well as the USDOL guidelines for project assessment and evaluations. Components of the evaluation plan included: 1) assessment of the project implementation and process; 2) qualitative assessment of the project-specific learning outcomes and program components; 3) assessment of program outcomes based on DOL quantitative metrics; and 4) formative feedback to inform the project partnership.

Evaluation activities were guided by the following evaluation questions:

- How were programs and program designs developed/modified during the grant period?
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- How has the program implemented professional development opportunities?
- How has the program implemented student support services?

Qualitative project-specific evaluation methods included: 1) participant surveys regarding program participation and satisfaction; 2) employer/stakeholder surveys and interviews regarding the training program, work readiness of students, and overall program collaboration; 3) faculty feedback regarding professional development and program components; 4) document analysis, and other methods to assess progress related to the plan of work; and 5) staff and college stakeholder interviews to assess components of the program as determined through the logic model (see Appendix 1) and evaluation design process.

Finally, the evaluation report does include a brief section on the benchmarking analysis that was conducted on the TAACCCT program participants compared to students in other Technical Education programs at NIC. Employment and wage data were only available on a very limited basis, documented through case notes by the project staff for participants in the program. As such, it was not possible to conduct a more comprehensive impact analysis. Additional details on how the benchmarking study was developed can be found in the outcomes section of this report.

Overview of Program

The *Soaring to Success* project expands the ability of NIC to respond to the economic and workforce development needs in northern Idaho by increasing the education and skill attainment of TAA-eligible veterans and other dislocated workers for employment in the aerospace industry. Per the TAACCCT proposal, "*the program seeks to enroll 495 unique participants over three years into an effective series of courses that stack portable, industry recognized credentials; leading to certificates, job placement and degree attainment*."

A focus during the first year of the grant was the development of the infrastructure and processes used to guide the project. Essential staff members were hired during the 2013 calendar year, including: a project director, a senior administrative assistant/data analyst, a Recruiter/Placement Coordinator, and instructors. Subject Matter Experts (SME) were engaged to assist with the development of the Composites and NDT Programs. During April and May 2013, an SME was commissioned to assist project staff with equipment purchases and lab/classroom needs. The SME also provided input and advice on the Composites Program curriculum. An additional SME was brought in to review curriculum for the first semester of the Composites Program; the primary focus was on fabrication courses. This SME was integral in writing the curriculum for lab courses, and providing advice on the construction and organizational layout of the classroom and lab space.

The project team at NIC worked to develop intake forms, policy guides, and other documentation during the first year of grant-funding. The team engaged the NIC administration in discussions related to ways to manage and share data that conforms to the systems and infrastructure already in place at the institution, while providing the support, flexibility, and capabilities needed to efficiently and effectively enroll, track, and support students in the grant program.

As the Aerospace Program was new to the college, space was needed to offer the new courses. Throughout the first nine months of the grant, the college worked with local community partners to identify and prepare a suitable location. In November 2013, NIC held a ribbon cutting ceremony for the Aerospace Center for Excellence (ACE). ACE operates in a converted building near the Coeur d'Alene airport. The building serves as a training and lab facility to prepare students to work in the regional (e.g., the city of Spokane, and Kootenai and Bonner counties) aerospace businesses.

Additional details about how the program developed are provided in the following section on the implementation analysis. Timelines identifying project milestones and evaluation activities and data collections can be located in Appendix 2.

Strategy Implementation Review

Based on a review of the Quarterly Narrative Progress Reports for TAACCCT grants submitted by the NIC Project Staff throughout the project, OEIE compiled the following Strategy Implementation Review to document progress on the Aerospace strategies and activities. These activities aligned with the USDOL TAACCCT Core Elements as defined in the SGA. Table 1 presents the review and progress achieved by the Aerospace Program throughout the grant-funding period. See Appendix 3 for a full review of *Soaring to Success* priorities, strategies, activities, and project deliverables.

Table 1. Strategy Implementation Review

North Idaho College *Soaring to Success* Implementation Review October 1, 2012 – September 30, 2016	
***Soaring to Success* Strategies and Activities**	**Implementation Progress**
Priority 1: Build effective Bridges between Curriculum and Industry.	
1.1 Build internal infrastructure to support evidence based aerospace program and grant requirements.	**Was implemented**
Strategy 1.2: Develop and align aerospace program curricula to meet industry need and develop career pathways and bridges, based on successful models.	**Was implemented**
Strategy 1.3: Adopt assessment technology tools to determine appropriate program placement.	**Was implemented**
Strategy 1.4: Implement model for developmental education to enhance retention.	**Was implemented**
Priority 2: Stacked and latticed credentials.	
Strategy 2.1: Develop stackable and latticed credentials that align with aerospace industry and student needs.	**Was implemented**
Priority 3: Online and technology enabled learning.	
Strategy 3.1: Adopt online learning, modular curriculum and blended learning strategies to accelerate progress.	**Was implemented**
Priority 4: Transferability and Articulation.	
Strategy 4.1: Develop articulation agreements to ensure transferability.	**Was implemented**
Priority 5: Strategic alignment.	
Strategy 5.1: Build awareness of aerospace industry employment and education opportunities; coordinate with public workforce system and other community partners.	**Was implemented**
Strategy 5.2: Implement work based learning strategies.	**Was implemented**
Strategy 5.3: Align with Air Washington to ensure best practices and transferability.	**Will be sustained**
Strategy 5.4: Place students in appropriate jobs.	**Was implemented**

Ratings include – planning, was implementing, will be sustained – based on OEIE analysis of data provided in DOL Quarterly Reports.

Key highlights from the project to note from this table include:

- NIC was successful in recruiting, hiring, and retaining program faculty and staff. NIC was able to build relationships and foster partnerships with local business and industry. These relationships were helpful in informing initial curriculum needs of the Aerospace Program. Continued engagement of the Advisory Committee and Idaho Aerospace Alliance provided necessary guidance for curriculum revisions and modifications over time in an effort to meet industry-drive competencies for program participants. Participant retention has been associated with the support of the Recruiter/Placement Coordinator and the I-BEST model.
- NIC developed and deployed seven stackable and latticed aerospace programs as proposed. Additionally a policy was developed to allow professional technical education students to seek credit for prior learning (CPL) up to 25% maximum of total program credits for their certificate or degree program. At the time of this report, no Aerospace Program participants have taken advantage of CPL at NIC. Federal financial aid was approved and is available for program participants.

- The NIC Aerospace Program effectively incorporated online accelerated learning for participants. Although an online curriculum was reviewed and recommended for purchase, NIC faculty and staff worked to develop online materials and resources to relieve the financial burden of the commercial products.
- NIC engaged Lewis-Clark State College (LCSC) and articulated an Advanced Manufacturing Associates of Applied Science into a Bachelor of Applied Science. LCSC curriculum changes were made to incorporate the Aerospace Program at NIC. As of Fall 2015, one NIC program participant was in pursuit of the degree at LCSC. Project Staff have indicated they will seek to locate and secure additional articulation agreements for the aviation maintenance program. NIC anticipated the development of non-credit programs to address the needs of local industry partners; to-date this has not occurred.

NIC has engaged in strategic alignment throughout the grant. The project initially communicated with the Air Washington Round 1 grantee about the TAACCCT project. Throughout the project, the faculty and staff have identified the best methods for engaging employers and industry partners in their local communities, as well as the Advisory Committee and Idaho Aerospace Alliance. These methods included communication by way of the Recruiter/Placement Coordinator and Human Resources, and local marketing at area recruitment events, and have resulted in placement strategies for program participants to enter the local workforce.

Program Implementation and Outcomes

The evaluation of the *Soaring to Success* project includes an implementation analysis to measure and report project progress. The intent of the analysis is to identify project components that are working well and those that may need attention or improvement.

Summary of Implementation Questions from Round 2 SGA

In November 2015, OEIE conducted interviews with the NIC Aerospace Project Team to gain feedback on progress related to the Round 2 Solicitation for Grant Applications (SGA) evaluation questions. Brief highlights of the interviews are as follows:

1. How was the particular curriculum selected, used, and/or created?

Employment in aviation maintenance and advanced manufacturing is growing rapidly in north Idaho, requiring a highly skilled workforce for aerospace jobs. In order to address this need, NIC developed training and educational opportunities in aviation maintenance and aerospace manufacturing. Based on local industry feedback, the program focused on knowledge that aerospace manufacturing workers would require in several areas: 1) Composites; 2) Non-Destructive Testing; 3) Quality Assurance standards; and 4) basic manufacturing skills such as blueprint reading and safety. Key efforts in the selection, use, and development of Aerospace curriculum included:

- Develop Online Components. A potential vendor (*180 Skills*) was mentioned in the proposal for the online components. However, to offset programmatic costs, and to increase project

sustainability, instructors were hired who went on to develop their own online course replacements via Blackboard.

- Identify TAACCCT Peer Partners. NIC worked closely with Air Washington, a Round 1 TAACCCT awardee in the region, as well as the National Aviation Consortium (TAACCCT Round 2 grant at Wichita Area Technical College) which focuses on similar Professional Technical Education (PTE). NIC used information from these partners in developing the Aerospace Program framework and curriculum.
- Engage Industry. The curriculum has been reviewed by the advisory board as well as industry experts. NIC is also engaged with the Idaho Aerospace Alliance, a regional organization of aviation and aerospace related companies committed to growing the industry sector through promoting and expanding the Idaho economy. Collective feedback from all of these industry partners has been incorporated throughout the development of the program.
- Engage Industry Expert. Trevor Budge, an accomplished composite technician and NIC Aerospace instructor, served as an invaluable asset, aiding in the development of the curriculum by way of identifying industry needs.
- Review of Similar Models. Curriculum development was also aided by visits to the Washington Aerospace Training & Research Center in Seattle.
- Challenges with Synchronizing Timeline. One difficulty noted by the project team was the grant requirement to identify and purchase relevant equipment prior to completing the development of the curriculum.

2. How were programs and program designs improved or expanded using grant funds? What delivery methods were offered? What was the program administrative structure? What support services and other services were offered?

The Aerospace Program is a for-credit program that is under the direction of the Dean of Career, Technical and Workforce Education (CTE), who provides updates to the college's President and Vice President of Instruction. Supervising the day-to-day activities of the program is the Project Director, who is assisted by a Recruiter/Placement Coordinator and an administrative assistant.

As a new program at NIC, grant funds were used to create most of the courses for the Aerospace Program. Faculty developed program-related courses and existing courses were specifically redesigned to better meet employer and student needs. Such courses included traditional classroom, online, and hybrid formats. Both mathematics and English in context courses were developed for the Aerospace Program; only the mathematics course was developed using grant funds. During the grant-funding period, course curriculum has been continually evaluated; adjustments were made when necessary.

The Aerospace Program was also augmented by the implementation of the I-BEST component, in which two instructors taught side-by-side. Within the I-BEST model, one instructor teaches professional/technical or academic content, the other instructor provides support for basic skills in reading, mathematics, writing, or English language. The Aerospace Program benefits from the dual teaching model. One Project Team member reported, "*Our I-BEST instructor certainly is key to their*

[program participants] academic success and in the courses." Another Project Team member added, program participants will likely benefit, "*especially if they've been out of school for a while…in the workforce, or maybe just didn't do well in school* [previously]."

As noted above, program delivery included traditional classroom, online, and hybrid instruction. However, due to the hands-on nature of the courses, the program looked at ways to expand their reach in the region. Working with one of their industry partners, NIC was able to establish an off-site training location, about 45 minutes away from the main campus, in Summer 2015. One of the company's employees was hired as an adjunct instructor through the college, and provided training in their facility in the evenings. This allowed individuals in the extended regional area the opportunity to participate in the composites program without traveling to the NIC campus regularly.

The project has experienced some staff changes over the course of grant-funding. While turnover can frequently cause delays in implementation, the project has remained stable. For example, the original Project Director, hired at the beginning of the grant was promoted in early 2014 to be Director of Aerospace and Outreach (this individual is now the Dean of CTE). This individual continues to be involved in the project, although at a higher, administrative level. This promotion resulted in the promotion of the original Recruiter/Placement Coordinator to Project Director. Program leads, administrative assistant, and the Recruiter/Placement Coordinator supplemented the structure of the program. The role of program lead is not supported by additional grant funds; individuals in this role are existing Aerospace faculty who advise the Project Team on curriculum changes. The administrative assistant and Recruiter/Placement Coordinator cooperate in the analysis of project data. Many support services have been provided by grant funds, especially by the Recruiter/Placement Coordinator, which provides assistance for program participants with scheduling, registration, industry correspondence, personal counseling, financial aid, scholarships, and résumé writing. One Project Team member suggested the Recruiter/Placement Coordinator acts as an '*intrusive advisor*.'

3. **Was an in-depth assessment of participants' abilities, skills, and interests conducted to select participants into the grant program? What assessment tools and processes were used? Who conducted the assessment? How were the assessment results used? Were the assessment results useful in determining that appropriate program and course sequence for participants? Was career guidance provided, and if so, through what methods?**

Entrance into the program was primarily governed by results of COMPASS tests (the computerized reading, writing, and mathematics placement exam used at NIC), the SAT and ACT, or previous academic performance (e.g., transcripts from another institution). The Aerospace Program proposed to administer the World of Work Inventory (WOWI) Career Assessment, as well as mechanical reasoning and spatial aptitude examinations to assess participant ability, skills, and interest. However, this was not actualized, as NIC already had multiple and similar batteries of assessment.

Admission requirement information was accessed through the NIC database to determine student placement. As long as minimum entrance requirements were met, applicants were accepted into the program. The college conducted these assessments at the Testing Center and through Career Services. Applicants that did not meet entrance requirements were recommended to other programs, such as

mathematics boot camp, remedial education, and Adult Basic Education. Applicants near the minimum requirement threshold met with program administration to determine the best course of action.

Admitted Aerospace Program participants are provided information about career pathways. General information provided to program participants includes:

- Pay grades from the Department of Labor,
- Career options based on education levels, and
- Visits from HR managers of local employers.

Services provided to program participants by the Recruiter/Placement coordinator include:

- Information on how to create a professional electronic profile,
- Participation in mock interviews,
- Résumé development,
- Tutorials on job hunting, and
- Referrals to Career Services at NIC.

One program administrator noted that these career guidance opportunities are also available to general NIC students through the college's services. However, TAACCCT program participants benefited by having an individual, the Recruiter/Placement Coordinator, dedicated to providing these services for the Aerospace Program. While these efforts have been helpful to the students, program staff noted that the Aerospace-specific services could always be promoted more actively.

4. **What contributions did each of the partners (employers, workforce system, other training providers and educators, philanthropic organizations, and others as applicable) make in terms of: 1) program design, 2) curriculum development, 3) recruitment, 4) training, 5) placement, 6) program management, 7) leveraging of resources, and 8) commitment to program sustainability?**

Industry partners have been involved in all aspects of program design and curriculum development. The Idaho Aerospace Alliance Group and the Advisory Committee were identified as key assets to the program. Industry partners have been helpful in providing input, as well as the review and approval of the program curriculum. The Project Team worked with the recommendations provided to ensure the necessary college and general education requirements were considered.

Various industry partners have helped with placement and hiring of program participants. Local employers have provided information about current job openings, and have permitted the Aerospace Program to post advertising and information fliers at their facilities. As previously identified, Aerocet has been a key player. At their Priest River facility, Aerocet has helped establish an off-site composites lab, with one of their employees serving as an adjunct instructor for the benefit of on-site training. The relationship with this industry partner has been mutually beneficial in terms of recruitment and hiring of program participants. That is, the Project Team indicated this partner has recognized the skill sets developed through the training as desirable and recommends the program to its employees.

Industry partners and the advisory board have also contributed in terms of advising program participants of job openings; indeed, certain industries will provide higher wages and preference for program completers. Several area employers have offered facilities tours to program participants.

Industry partners, such as Aerocet, AGC Aerocomposites, and Lockheed Martin, have continually donated a considerable amount of materials and equipment. These donations allow for more frequent labs, and save program participants on material costs and fees associated with labs. One Project Team member noted the contributions of the NIC Foundation, which has provided scholarships for program participants. Private Citizens have made additional donations. These partnerships and relationships allow NIC to leverage resources in an effort to increase sustainability. Based on the Aerospace Program's current success, NIC has been engaged in discussions with the state office of PTE to explore options for sustaining the program. Industry partners, the Department of Labor, and NIC administration, beyond CTE, have been advocates of the program. These entities support the Aerospace Program's efforts in lobbying the Department of Education to sustain the program beyond grant-funding.

5. What factors contributed to partners' involvement or lack of involvement in the program?

One factor that contributed to the lack of involvement was the discrepancy between the forecasted versus actual industry needs in the region. In that, the grant proposal was written to address estimated regional employment needs, which led to the projection of the number of program participants. Specifically, the target of 495 program participants was based on projected growth of five area employers. Industry turnover and changes in local employer's business models has also had an adverse effect on enrollment. One NIC program administrator described that some partners were unable to be engaged as much as they had initially intended for a variety of reasons (e.g., acquisition by another company, improper forecasting of need) but are still interested in program participants.

Secondly, as the geographical reach of the Aerospace Program has expanded, it has made it more difficult to engage employers from a distance. One Project Team member suggested that those employers who are closer in proximity are "*able to attend more events*." These local partners are better able to provide the Aerospace Program and its participants' information about employment opportunities, and can encourage employees to enroll in Aerospace-related courses. Conversely, those partners who are separated by a greater distance from NIC face challenges being involved more closely. For example, the distance may make it difficult to participate in the Advisory Committee, or attend NIC-related events.

6. Which contributions from partners were most critical to the success of the grant program? Which contributions from partners had less of an impact?

The most critical elements of success for the Aerospace Program, as identified by the Project Team, are the relationships with the community and employer partners. These relationships have resulted in a variety of benefits, including donations of time, materials, and equipment; hiring program participants; identifying current job openings; and providing advice in steering the Aerospace Program. These relationships have resulted in continued support of the program, in terms of donations and advocacy for sustaining the program.

As previously mentioned, industry partner forecasting has had an impact on the grant program. Though the program will not serve 495 unique participants within the grant-funding cycle, the program will have a lasting effect at NIC and within the region, as the aerospace industry in Idaho is continuing to grow. Aerospace is a focal industry in the state. Of this, one Project Team member stated, "*it (the Aerospace Program) will touch the lives* [of] *495 participants in the next few years. It's going to continue to have a lasting impact in this region.* [Employers have the] *opportunity to grow and have access to a skilled workforce*."

Summary of Participants Served

As of August 2016, the Aerospace Program has enrolled 132 unique participants. Although this number is less than the target identified in the grant proposal, the project team has worked with their Federal Program Officer to address this issue in the on-site monitoring review.

- Aerospace Program intake data indicate that participants are from Benewah, Boundary, Bonner, Kootenai, Latah, and Shoshone counties. Participants are also from the states of North and South Dakota, and Washington.
- The majority of program participants reported their hometown as being within Kootenai County, Idaho's 3rd most populous county. See Appendix 4 for a graphic representing the cities from which participants come, as well as the number of individuals hailing from each city.
- Program participant employment data is presented in Appendix 4. Identified on the map are the NIC Implementation Sites (i.e., the Aerospace Center for Excellence, North Idaho College) and the cities in which participants are employed. Cities where aerospace employer partners are located are labeled on the map, including the number of participants employed with each industry partner.

As noted in previous reports, the USDOL granted the Round 2 TAACCCT projects a six-month extension period for project implementation. This extension period ran from October 1, 2015 to March 31, 2016. As a result of this extension, the Spring 2016 semester was the sixth regular academic term for the NIC Aerospace Program. The Fall 2015 semester was the first opportunity for participants to enroll in the new Federal Aviation Administration (FAA) approved Aviation Maintenance Program. Due to the length of the approval process for this program, the first completers are not expected until after the end of the official grant period.

Table 2 on the following page shows the credentials earned by the cohorts in the Aerospace Program.

Table 2. Aerospace Technology Advanced Manufacturing Stackable Program – Credentials Earned

Semester Started	Cohort 1 Fall 2013	Cohort 2 Spring 2014	Cohort 3 Fall 2014	Cohort 4 Spring 2015	Cohort 5 Summer 2015	Cohort 6 Fall 2015	Cohort 7 Spring 2016	Total
Aerospace Technology Core Post-Secondary Certificate	37	11	16	8	2	3	--	**77**
Aerospace Composite Fabrication on Post-Secondary Technical Certificate	38	12	16	8	5	3	--	**82**
Aerospace Repair and Quality Assurance Post-Secondary Technical Certificate	32	8	13	5	2	2	--	**62**
Aerospace Composite Technician Post-Secondary Certificate[*]	32	8	13	5	2	2	--	**62**
Aerospace (CNC) Mill Operation Basic Technical Certificate	14	7	10	4	--	1	--	**36**
Aerospace Testing and Inspection Basic Technical Certificate	11	6	8	4	2	--	2	**33**
Aerospace Technology Advanced Manufacturing Advance Technical Certificate[**]	10	6	8	2	--	--	--	**26**
Aerospace Technology Advanced Manufacturing Associates of Applied Science[***]	3	--	2	2	--	--	--	**7**
Total Credentials Earned								**385**

Note. Total values indicate unique participants for each award.

[*]When the Aerospace Composite Technician Post-Secondary Certificate is achieved, the following certificates have also been earned: Aerospace Technology Core Post-Secondary Certificate, Aerospace Composite Fabrication Post-Secondary Post-Technical Certificate, and the Aerospace Repair and Quality Assurance Post-Secondary Technical Certificate.

[**]When the Aerospace Technology Advanced Manufacturing Advanced Technical Certificate is achieved, the following certificates have also been earned: Aerospace Composite Technician Post-Secondary Certificate, Aerospace (CNC) Mill Operation Basic Technical Certificate, and Aerospace Testing and Inspection Basic Technical Certificate.

[***]When the Aerospace Technology Advanced Manufacturing Associate of Applied Science is achieved, participant has completed general education requirement (listed in college course catalog) and 44 credits or more in the professional-technical program.

Evaluation Questions

In addition to the questions from the SGA, the evaluation also addressed specific questions related to the design and implementation of the program. Data have been collected throughout the life of the project to address the formative aspects of these questions. During the Spring 2016 academic term, the final data collection was conducted with students, faculty, college administrators, local employers and project staff to capture the summative feedback on the program.

1. How were programs and program designs developed and modified during the grant period?

As proposed, the *Soaring to Success* project intended to provide stackable credentials to enhance certificate attainment and career pathways. Two primary programs of study were aerospace manufacturing (an accelerated learning program leading to employment in manufacturing after 12 weeks) and aviation maintenance-airframe (a 10 month FAA certification leading to employment as an aviation mechanic). The programs were designed such that participants could utilize an open-entry/open-exit model. All participants would initially take Manufacturing Core courses; two four-week courses using blended learning (four weeks online followed by four weeks of laboratory instruction). Upon completion of these courses, participants would receive a technical, credit-bearing certificate. Upon completion of Manufacturing Core coursework, participants would select a program of study: Composite fabrication and repair (first offered Fall 2013); Computer Numeric Control (CNC) machining (first offered Fall 2014); or Non-Destructive Testing (NDT; first offered Spring 2015). Aviation Maintenance Technology (first offered Fall 2015) follows FAA regulations which require two semesters of face-to-face instruction, including coursework in General Aviation and Airframe, and results in a Technical Certificate.

As indicated in the Notice of Availability of Funds and SGA for TAACCCT Grants Program, a core element for grantees is online and technology-enabled learning. Prior to grant-funding, PTE courses at NIC were not delivered through online or blended learning. NIC initially identified *180 Skills*, an online learning company, as a potential developer of blended learning content. *180 Skills* was targeted because of the previous collaboration with the Washington Aerospace Training and Research (WATR) Center operated by Edmonds Community College in Lynnwood, Washington, and by Wichita Area Technical College's National Center for Aviation Training in Wichita, Kansas. However, due to budget limitations the use of an outside vendor was not feasible. Rather, NIC expanded its use of online and blended learning with compressed, modular curriculum designed in-house to accelerate progress toward certificate attainment and job placement.

As a new program at NIC, grant funds were used to create most of the courses for the Aerospace Program. Faculty developed program-related courses and existing courses were specifically redesigned to better meet employer and participant needs. Such courses included traditional classroom, online, and hybrid formats. Both mathematics and English in context courses were developed for the Aerospace Program; only the mathematics course was developed using grant funds. During the grant-funding period, course curriculum has been continually evaluated; adjustments were made when necessary. One such adjustment was made to the Advanced Manufacturing AAS. The degree program has been approved to incorporate seven elective options, as well as NDT courses, making the AAS easier to

achieve, more flexible to student interest, and does not compel participants to achieve the NDT certificate. Upon earning the AAS, participants will have achieved five subordinate certificates, and possibly the additional NDT certificate.

Throughout the grant-period, feedback was solicited from stakeholders to identify successes and challenges related to the curriculum and content delivery. As noted by NIC administrators, the project staff continually refined and expanded the course offerings for the Aerospace Program. One such refinement was to offer courses online. Currently, eight courses are being offered online, allowing students greater flexibility in scheduling and access to materials.

Further, during Fall 2016, seven new elective courses will be added as alternative options for participants. As well, during the final year of the grant, the project staff received approval for six new certificate offerings. One area of expansion was the alignment of state technical training goals, which allowed high school juniors and seniors to take dual-credit classes at community colleges. Though high school students cannot be counted as participants for the *Soaring to Success* grant, students have been allowed to take dual-credit classes. Classes have been offered online, and can reach students throughout the state of Idaho. Allowing high school enrollment has had a positive impact, as it serves as a recruiting tool for the program. It also has created an opportunity for a foundation-funded summer aerospace camp for high school students. One faculty member commented, "*The online courses work great as a recruiting tool*" that will bring high school graduates to north Idaho.

As noted, program delivery includes traditional classroom, online, and hybrid instruction. However, due to the hands-on nature of the courses, the program looked for ways to expand their reach within the region. Working with one of their industry partners, NIC was able to establish an off-site training location, about 45 minutes away from the main campus in Summer 2015. One of the company's employees was hired as an adjunct instructor through the college, and provided training in the facility during the evenings. This allowed individuals in the extended regional area the opportunity to participate in the composites program without traveling to the NIC campus regularly.

Various employer partners have expressed the positive impact of being included in the process of the development and act of refining courses as being integral and relevant to real job opportunities. Specifically, one partner mentioned,

> *They've refined the program and we've worked closely with them to let them know more of what we're looking for in a new-hire. We continue to learn from each other as far as setting up that program so it's meeting employers' needs.*

Continued involvement in the process of course refinement helps to make the classroom learning relevant to real-world employment opportunities. Several area employers invite program participants to tour their facilities. The tours provided the chance for program participants to see processes outside of the classroom. Participants are able to engage the employers in conversations regarding the facility and operations as identified by an industry partner, "*Each new class, we invite to tour our facility. They come over and take a look at the composite production* [process] *outside of the classroom*."

Despite meeting industry needs, employers look to the future and potential modifications in courses and engagement as suggested by the following:

> *We would like to see NIC continue to engage the aerospace industry players and work towards strengthening not only the level of training [depth and breadth], but the variety as well. We would also like to see more movement towards online training and a management system that would allow us to move more of our training to the college. There are many benefits to all involved by having such an online system, some of which include less management by industry on training while providing a way of feeding working students to additional training of interest to employees, or even required by employers. Once set up, it can be virtually and self-managed. If agile, it can readily grow and change as the local industry grows and changes. I would follow the myicourse model[1] but at the local college so that it would be a hybrid system which is integrated where applicable with the brick and mortar programs. Work closely with businesses and offer a menu of services from just the software platform to creating content for the business, to a complete paid-for solution. It can be very specific to the individual business and that has a lot of value to growing businesses that spend a lot of time training by osmosis.*

One cause for program modification was the introduction of the Aviation Maintenance program. As noted by project staff and administrators, they underestimated the intricacies of the FAA regulations and the financial outlay needed to meeting those strict regulations. Working with the regulations imposed by the FAA slowed the roll out process for the program. One college administrator spoke about the process, "*…until you're actually are sitting down with every regulation in front of you and realizing the implications they have, you don't understand how the planning actually takes much more time. At times it seemed a bit constrictive to our curriculum development in that we had to process so much to develop that curriculum to make sure we were meeting all the expectations*."

Another growing pain the program experienced was space-related. As more courses and programs were added, the college was challenged to provide classroom and lab space. One specific struggle identified by multiple stakeholders is related to the introduction of the Aviation Maintenance program; the ACE (the building in which courses are offered) cannot accommodate a full-sized airplane. One administrator, however, indicated the expansion of technical programs has allowed for the construction of "*a new 110,000 square foot career and technical education building*." The new building will house nine programs beginning in Fall 2016. The next planned phase of expansion (in about 3 year) will be to build facilities on a 40 acre plot of land.

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[1] Myicourse enables individuals, groups or companies the ability to create, distribute and monetize educational/promotional content on their own brandable, skinnable website. To encourage and promote the sharing of valuable knowledge, all basic myicourse functionality is FREE. A 'public' myicourse website is openly accessible and the website owner can determine what content is published within a course catalog. A 'private' myicourse website allows the creation of content (i.e., 'courses') and the assignment of 'courses' to privately enrolled groups or individuals.

An additional way the programs were modified from the original proposal during the grant-funding period was associated with the academic schedule and financial assistance. NIC, like many other institutions of higher learning, runs on a semester system, which limited the ability for open-entry/open-exit modular curriculum and program offerings within the PTE division. The Aerospace Program intended to offer courses using an open-entry/open-exit model; however, it was determined fairly early that this would not be feasible. A project staff member noted the following reasons for the changes: students needed to use financial aid and the GI Bill, and training took more time than anticipated because students needed more time to understand the mathematics component of courses. The students' need for financial aid prompted introduction of 2-year degree programs that add general education classes to the technical degree programs. In Fall 2013, financial aid for program participants was approved, alleviating this issue of potential funding for participants.

2. How were institutional policies and procedures impacted through the implementation of the grant?

Faculty hires were essential to the success of the Aerospace Program at NIC. Faculty were hired to develop and implement the program courses. Specifically the project staff noted, "[The Dean] *sought out and found some qualified faculty to get involved. People who had experience…came into the project to start the curriculum development*." The expertise of the faculty "*lead to the quality of the curriculum*." Faculty members have benefited from mentoring in areas like machining, auto body, and composites. Another staff member added,

> *I'm really impressed by the dedication and excitement of our faculty and staff. The people that we've hired are just really passionate about their program and the field. They don't just live this during the day. They live this all the time. It's something that they are really passionate about. It's really neat to see that.*

Administrators and project staff have been extremely pleased with the efforts and expertise of those faculty hired to teach Aerospace courses are NIC. The faculty has been described as "*mission-oriented*" and continue to "*put in the extra hours…things you couldn't have asked for*." It has also been noted that despite the offer for more money in industry-related jobs, many faculty are happy to train the workforce at the college.

Effective February 2014, North Idaho College published a policy to allow for credit for prior learning (CPL) for professional-technical students. CPL will allow for a wide range of options recognizing military and workforce training to portfolio development, and national certifications and examinations. NIC evaluates CPL to enable professional-technical students to enrich or accelerate their program of study. Credit may be awarded for learning through work-experiences, correspondence and extension course, civic, community, and volunteer work. It is awarded for the achievement of an advanced level of knowledge and/or skill outside of college coursework. Learning must be documented, demonstrable, college-level, currently applicable, and be equated to specific course outcomes in the curriculum. To date, no student enrolled in the program has attempted to receive CPL.

The Aerospace Program has worked to develop articulation agreements to ensure transferability to 4-year institutions. Lewis-Clark State College (LCSC) has been identified by project staff as a suitable partner institution. The agreement serves to help facilitate the transfer of NIC's AA/AS degrees to LCSC's baccalaureate degrees. Under the provisions of the articulation agreement, NIC students may be granted admission to LCSC with third year (junior) standing, contingent upon having met the conditions contained within the agreement.

Meeting FAA requirements has also prompted a change record keeping practices. The method is a specific and intense process to ensure participants are meeting FAA requirements through auditable record-keeping. Administrators admit learning and integrating systems for program data collection has been difficult, "*We're struggling with our time management system for our FAA-approved airframe program. It's taken lots of man hours to track students' time and I guess if we had more money maybe we could find a better system*."

3. How has the program developed partnerships?

A focus of the Aerospace Program has always been to meet industry needs. In the project proposal, NIC identified the need to engage Subject Matter Experts, industry representatives, and an advisory board to be a successful program; of which all engagements have occurred. Industry partners were initially involved to identify the skills and credentials necessary to qualify individuals for employment, and continued to advise on the potential modifications that would help the program realize continued progress and development.

One strategy to building successful aerospace industry partnerships was the establishment and engagement of the Advisory Committee for the Aerospace Program. The Advisory Committee is comprised of 12 members from 11 regional aerospace employers. An additional 14 individuals, from 13 employers are considered project partners. The advisory board includes members who are world-class in their fields, e.g., Burt Rutan (aerospace engineer), Murdo Cameron. The goal of the Advisory Committee is to provide feedback on project implementation and ensure project sustainability beyond the grant-funding period through student recruitment and the expansion of employer engagement across the region. Through their involvement in the project, the Advisory Committee members have helped improve the lab curricula by providing input on most critical skill set needed.

Survey results over the first years of the grant indicate the Advisory Committee members reported having an understanding of the visions and goals of the project, as well as the value, the purpose, and the tasks of the committee. Committee members also reported satisfaction with the progress and implementation of the project, and indicated that the program is positioned to meet the area employment needs and market demands; facilities and equipment are adequate to meet project objectives, and the program curriculum is relevant and will allow graduates sufficient knowledge, skills, and abilities to meet entry-level position standards. One Advisory Committee member provided this comment regarding the project:

> *I am thoroughly pleased with the results of the program so far and directly attribute the successes to the team that has been assembled by NIC. We currently give preference to*

> *students from this program over individuals without a similar background. Students of the program also immediately qualify for a higher entry-level wage.*

Industry partners have been involved in all aspects of helping to launch the Aerospace Program, including program design and curriculum development. The Idaho Aerospace Alliance Group, which represents manufacturers and suppliers servicing the aerospace industry, and the Advisory Committee were identified as key assets to the program. Industry partners have been helpful in providing input, as well as the review and approval of the program curriculum. One industry partner noted, "*Aerocet has provided and continues to provide instruction in the aerospace composites portion of the program. We have also provided in-class presentations on quality systems and their importance in aerospace*."

A highlight of the project is the engagement of industry association, industry workforce development, and community and regional partners; the development of partnerships is a key component of the project. One NIC administrator reported "*We have now become great partners with the [Idaho] Economic Development Agency and we have been instrumental in attracting new business to this area and supporting the existing businesses that are expanding*."

Program partners (e.g., Aerocet, AGC Aerocomposites, Cameron Aircraft, and Empire Aerospace) continue to provide donations in the form of time and equipment. Equipment donations have been an unexpected project outcome. These donations allow for more frequent labs, and save program participants on material costs and fees associated with labs. From the employer perspective there is now an opportunity to donate materials instead of disposing of them. In reference to donated materials, one partner replied,

> *We have material; we have equipment that we no longer need. Material that expires that can still be used. So it's been great to partner with them and be able to find a home for it instead of just seeing it go to the dump.*

The ongoing collaboration and partnership with local business and industry has been a continued highpoint for the Aerospace Program. NIC had ties with several local employers, but the introduction of the Aerospace Program has enhanced those partnerships and relationships. One employer partner stated, "*Previously we had only worked with the NIC Workforce Training Center and attended some single course offerings; it was more of a vendor/buyer arrangement. Aerocet and NIC have a closer working relationship, a higher degree of benefit to both parties*."

Partnerships and relationships with industry have typically been positive, though the Aerospace Program has had to make some adjustments to address industry expansion and priorities. For example, some industry partners evolved and expanded quickly, requiring NIC to be flexible enough to meet the changing needs of the industry partners. An administrator mentioned "*We started out with some really key industry partners and one or two of those partners have expanded dramatically because of opportunities they've had*."

The changes in direction, mission, and productivity have influenced what those companies needed from NIC and the Aerospace Program. Specifically, one company relocated to Idaho from another state. This is an example of "*a new business moving into the area because we can provide that workforce*."

Another industry partner just broke ground on a facility that would allow the company to double in size, "*They are dramatically expanding their business because now they have a workforce they can tap into*." A third industry partner was just acquired by a Japanese company and is also expanding rapidly. "*Over the course of the next 6 months, they* [will] *need 100 workers. We've put in place a training program specifically related to sheet metal and riveting. And we – this summer – will begin training those 100 workers*."

Partnerships have resulted in closer relationships between NIC and area employers, as well as an increased awareness of the programs NIC has to offer. This allowed employers to utilize NIC to strengthen their workforce in ways that were not previously realized. Another outcome is the continued fulfillment of training needs. To reduce a duplication of efforts, employers worked with NIC programs to identify gaps in training that need to be filled. A local employer stated, "*We feel that this partnership strengthens not only our position in the community but the community itself.*"

4. How has the program implemented professional development opportunities?

In general, the Aerospace Program continued to garner support from both the NIC and the college administration. This has been demonstrated by the commitment of $350,000 for the building to house the classroom and laboratory activities. As the program has grown, more staff have been hired, requiring the college to tap additional funding sources. Further, the program fits well with the college's mission and every program has been self-examined with data so it is sustainable into the future. College funds have been appropriated for faculty to attend training programs. Curriculum release time was been designated for faculty to plan and update program curricula. E-training and support is offered for faculty.

The Aerospace Program is involved with three professional organizations. During the second quarter of Year 2, NIC joined the American Composites Manufacturers Association (ACMA) and Aviation Technical Education Council (ATEC). Two faculty members achieved instructor certifications from ACMA. There are currently no plans to offer certifications for students, however, employing certified instructors adds to the value of the Aerospace Program by enhancing the student experience.

During the first years of the project, in an effort to increase participant numbers, several courses were offered during the summer terms. As a result, the faculty had reduced opportunities to be engaged in state trainings that occurred over the summer. As the program transitioned out of the funding-period, a shift to fewer summer offerings will result in increased opportunities for faculty members to attend summertime trainings.

Faculty have been committed to professional development as evidenced by participation in various certification courses (e.g., teaching certification class offered by the state, and solid works mechanical design certification). Further, faculty report engaging in self-study and training to improve the content of

the course taught. Specifically, one faculty member cited enrollment in coursework to obtain an engineering degree as part of professional development and training.

5. How has the program implemented student support services?

One aspect of the *Soaring to Success* project intended to provide student support services was the position of Recruiter/Placement Coordinator. The original intended role of this position was an individual that would collaborate with the Idaho Department of Labor and other community partners to increase recruitment efforts and enhance students' "*one stop*" experience. The position was supported by the TAACCCT grant and afforded program participants several unique opportunities. The Recruiter was able to dedicate 100% of his time to handling the enrollment and scheduling of students. As well, he was able to provide assistance with résumé development, mock interviewing, and other guidance related to career exploration. It has been noted that the services provided by the Recruiter/Placement Coordinator are available to the general NIC student population through a variety of alternate college services, however, within the Aerospace Program, this individual was solely dedicated to working with program participants.

As proposed, *Soaring to Success* was intended to serve the education and training needs of the TAA-eligible workers in the region. Participant intake data indicate that less than 1% (*n*=1) of individuals served by the grant were TAA-eligible. Within the region, a high number of TAA-eligible students were not available. Despite not recruiting TAA-eligible individuals due to a lack of access, the program was successful in attracting participants. The grant-sponsored Recruitment/ Placement Coordinator position can account for much of these successes.

As indicated by the Project Staff, the Recruiter/Placement Coordinator was integral in helping with participant retention and advising. The Recruiter/Placement Coordinator helped to recruit area high school students to the Aerospace Program. Despite the continued success of this position, the Aerospace Program is not able to sustain the position beyond grant-funding. The loss of the recruitment coordinator position would likely impact the efforts of attracting participants. To counter this loss, the project staff hired two part-time staff during the Spring/Summer 2016 in an effort to reduce the impact of the transition away from the permanent position. Fortunately, however, the Recruiter/Placement Coordinator remains employed at NIC and is available to assist the Project Staff in minor tasks.

When surveyed, program participants indicate positive and impactful experiences with the Recruiter/Placement Coordinator, "*they have helped a great deal in planning of my education*." Another participant reported, "*He has gone out of his way to talk to employers in the aerospace* [industry] *and related industries and find job opportunities for many*." Generally, the Recruiter/Program Coordinator has helped to facilitate participation in the Aerospace Program, "*if it weren't for the Recruiter/Placement Coordinator, I would not be in the program right now*" and assisted with helping participants become more familiar with the industry, "*the Recruiter has helped me with my interview skills and resume to receive a career in the aerospace industry*."

The Aerospace Program offered a variety of additional services to program participants including:

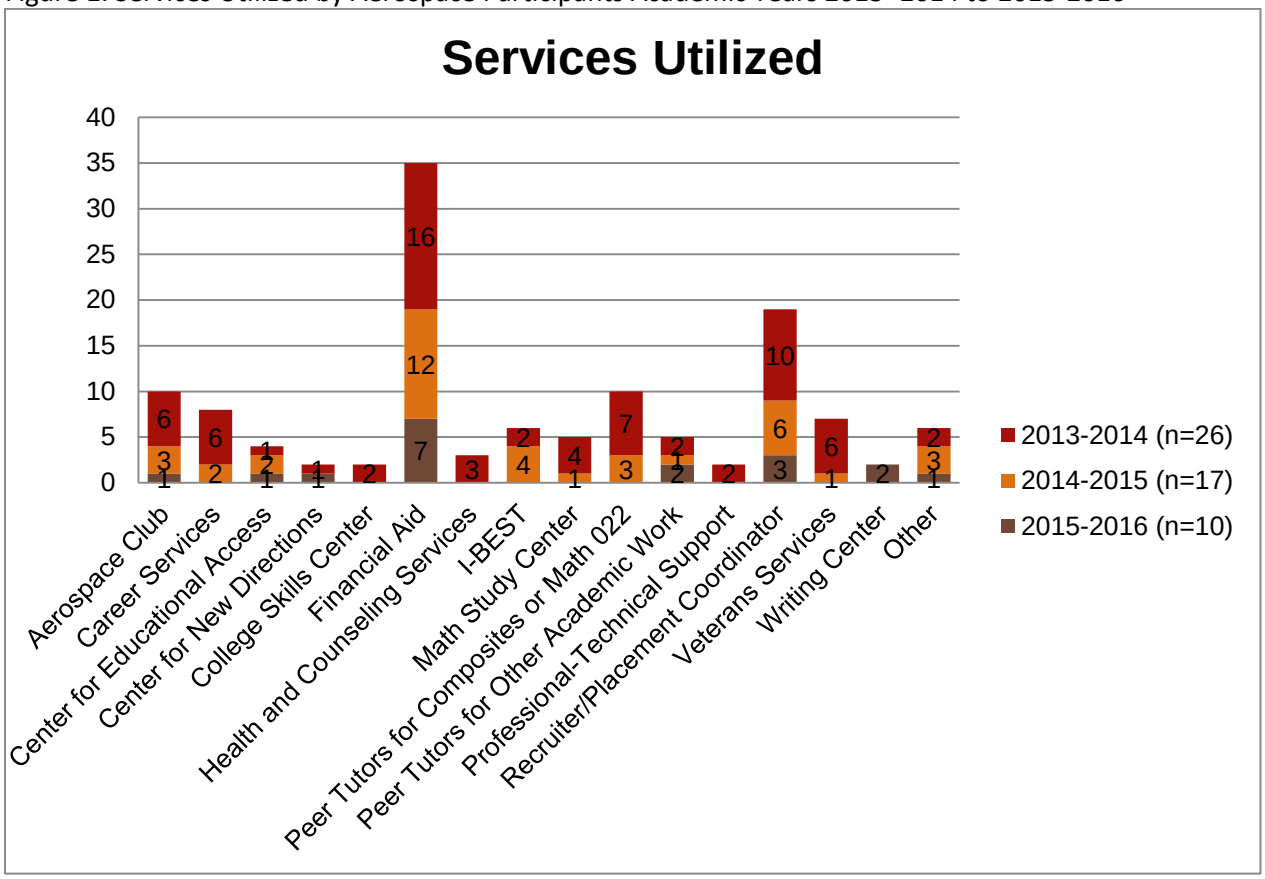
- Information about pay grades from the Department of Labor,
- Career options based on education levels,
- Visit from HR managers of local employers,
- Information on how to create a professional electronic profile,
- Mock interviews,
- Résumé development/refinement, tutorials on job searching, and
- Referrals to Career Services.

Program participants report not only the knowledge of the existence of these services, but also that they utilize them, and the services are helpful in gaining employment. Other services provided to program participants are the Aerospace Club, I-Best, and Peer Tutors. See Table 3 for a breakdown of services offered to the Aerospace Program Participants and Figure 1 for NIC and Aerospace service provided to program participants.

Table 3. Services Offered to Aerospace Program Participants

	Were you **aware** of this service?		Did you **use** this service?		Is this service **helpful** for gaining employment?	
	Yes	**No**	**Yes**	**No**	**Yes**	**No**
Information about pay grades from the Department of Labor	5	6	4	6	6	3
Career options based on education levels	5	6	2	7	7	2
Visits from HR managers of local employers	6	5	6	4	7	2
Information on how to create a professional electronic profile	3	8	1	8	6	4
Participation in mock interviews	2	9	1	8	7	2
Resume development/refinement	3	8	2	7	7	2
Tutorials on job searching	3	8	1	8	6	3
Referral to Career Services at NIC	4	7	1	9	6	3

Figure 1. Services Utilized by Aerospace Participants Academic Years 2013- 2014 to 2015-2016



Initially, program participants reported active engagement in the Aerospace Club. The club was formed during the first semester of the Aerospace Program. It served to allow students additional time to work in the facilities and utilize the lab space; similar to a shop or industrial arts class. The club provided access to mentoring opportunities. Despite high initial enrollment in the Aerospace Club, program participants have not reported engagement when recently surveyed.

In 2010, NIC began basic skills and developmental instruction using the Integrated Basic Education and Skills Training (I-BEST) model. The I-BEST program integrates basic skills and contextualized postsecondary education and training. The Aerospace Program implemented the I-BEST model for developmental education to enhance retention within the Aerospace Program. Similar to the Aerospace Club, the I-BEST instructor was identified as a useful support for program participants in the early years of the grant. Participants stated, "*It has allowed me to get the help I need, at my convenience*." And, "*I have come to trust my I-BEST instructor completely and wholeheartedly. He has proven to be a very trusted ally in the confusion and difficult times of the college life*."

Another support service that was implemented was the use of peer tutors for aerospace courses (e.g., Composites, Math 022). It was previously reported that retention of program tutors was a challenge; however, a success of the project has been that students with two or more semesters have been hired and successfully retained as peer tutors. The retention of tutors has been the result of participants progressing beyond the subject matter of the first semester courses, and feeling more confident about

their understanding of aerospace content. Program participants have had positive interactions with the peer tutors stating, "*It allowed me the opportunity to gain more knowledge about the projects I am working on*," and "[it] *made the more difficult sections easier to understand*." A third participant reported, "*They were mandatory for my success and being able to continue*."

Outcomes/Impact Analysis

A major component of the project evaluation is the outcomes/impacts analysis. The objective for this assessment was to understand the impact of the *Soaring to Success* project on student participants in terms of training and employment outcomes, compared to students not served by the grant program.

Throughout the grant period, the project team and OEIE worked with the NIC Office of Institutional Effectiveness to discuss options for managing and sharing data. The purpose was to identify a process that conforms to the systems and infrastructure in place at NIC that would allow the project team and the third-party evaluator to efficiently and effectively enroll, track, and support participants in the program. As part of this process, formal data sharing agreements were executed between North Idaho College and Kansas State University.

As part of the ongoing discussions, NIC shared their processes for accessing employment and wage data from the Idaho Department of Labor for program participants and benchmarking groups. Although the State of Idaho has worked to develop a longitudinal database that connects education and labor data, the policies and procedures for colleges in the state to obtain these data have not been entirely clear. An initial Memorandum of Understanding (MOU) between the Idaho Department of Labor and the Idaho State Board of Education was established in 2014 to facilitate data sharing. However, it was not clear if college-level access was addressed in this agreement. Further, personnel transitions at the state agencies have also contributed to delays in the process. Data from the Idaho Department of Labor was not available to NIC to include in its final report. Data from the college, along with follow-up data provided by students is reported, however, to document outcomes to the best extent possible.

As identified by other TAACCCT grantees, NIC faces challenges to the accessibility of labor data. Project staff continued to investigate alternative means to obtaining these data. The College of Southern Idaho, a partner school, has been successful in obtaining this type of data, however the data have been obtained in aggregate form, and the process has been lengthy. Project staff were hopeful that the financial aid reform will allow these data to be obtained, in aggregate, from Social Security; this did not occur in time for this report. Due to the lack of employment data, the outcomes analysis for the *Soaring to Success* focused on a descriptive benchmark between Aerospace Program and the cohort group.

Over the course of the project, 132 unique participants were served by the Aerospace Program. The evaluation team conducted a descriptive outcome analysis that was benchmarked to other technical education programs at the college. The analysis is used to demonstrate the level of performance or success of the *Soaring to Success* program participants in comparison to similar NIC students. NIC project and college staff, as well as OEIE targeted two technical programs at the college, the Machining and CNC Technology and Welding Technology during Fall 2013 (*N*=32), as the comparison group. The participant and benchmark groups share similar technical fields of study and length of program towards

the acquired credentials (see Table 4). Other parallels between the Aerospace Composites Technology and technical programs include the core skills and abilities, as well as job demands for program completers.

Table 4. Program Comparison – NIC Aerospace and Cohort Groups

	Aerospace Technology	Welding Technology	Machining and CNC Technology
Educational Comparison			
Technical Certificate Program Requirements	First Semester: 15 credits (Aerospace Post-Secondary Technical Certificate, Aerospace Composite Fabrication Post-Secondary Technical Certificate) Second Semester: 12 credits 27 credits (Aerospace Composite Technician Technical Certificate)	First Semester: 19-20 credits Second Semester: 20 credits Program Total: 39-40 credits	First Semester: 17-19 credits Second Semester: 16 credits Program Total: 33-35 credits
Professional Technical Program	N/A	First Semester: 19-20 credits Second Semester: 20 credits Third Semester: 14 credits Fourth Semester: 15 credits Program Total: 68-69 credits	First Semester: 17-19 credits Second Semester: 16 credits Third Semester: 16 credits Fourth Semester: 13 credits Program Total: 62-63 credits
Associates of Applied Science Degree	First Semester: 15-17 credits Second Semester: 12 credits Third Semester: 18 credits Fourth Semester: 17 credits Program Total: 62-64 credits	First Semester: 19-20 credits Second Semester: 21 credits Third Semester: 17 credits Fourth Semester: 18 credits Program Total: 75-76 credits	First Semester: 17-19 credits Second Semester: 17 credits Third Semester: 19 credits Fourth Semester: 16 credits Program Total: 69-71 credits
Type of Award	Aerospace Post-Secondary Technical Certificate; Aerospace Composite Fabrication Post-Secondary Technical Certificate; Aerospace Composite Technician Technical Certificate	Technical Certificate; Advanced Technical Certificate; Associates of Applied Science Degree	Intermediate Technical Certificate; Advanced Technical Certificate; Associate of Applied Science Degree

	Aerospace Technology	Welding Technology	Machining and CNC Technology
Credits Required	Basic Technical Certificate (9-11 Total Credits)	Intermediate Technical Certificate (31-33 Total Credits) Advanced Technical Certificate (55-57 Total Credits) Associate of Applied Science Degree (62-64 Total Credits)	Intermediate Technical Certificate (33-35 Total Credits) Advanced Technical Program (62-63 Total Credits) Associate of Applied Science Degree(69-71 Total Credits)
Expected Length of Program	2 years	1 year	2 years
Instructor Qualification	Requires a Master's degree in the academic subject matter are but will be required to make substantive progress toward its completion during each year of the probationary period.		
Employment Comparison			
Employment	Program is designed to prepare students for entry-level employment in the industry.		
Starting Wage Data	The median wage for computer-controlled machine tool operators (metal and plastic) in Idaho is **$29,460/ year**. Half of all computer-controlled machine tool operators (metal and plastic) in Idaho earn **between $26,060 - $36,080/ year**. The median wage for Aircraft mechanics and service-technicians I Idaho is **$48,390/year**. Half of all Aircraft mechanics and service technicians in Idaho earn **between $37,130 and $56,140/year**.	The median wage for welders and solderers in Idaho is **$34,200/year**. Half of all welders and solderers in Idaho earn **between $28,110-$40,120/year**.	The median wage for machinists in Idaho is **$38,850/year**. Half of all machinists in Idaho earn **between $31,250-$48,050/year**. The median wage for computer-controlled machine tool operators (metal and plastic) in Idaho is **$29,460/ year**. Half of all computer-controlled machine tool operators (metal and plastic) in Idaho earn **between $26,060 - $36,080/ year**.

Note. Data based on information available from the U.S. Department of Labor Statistics, 2014.

Data for the grant participants was compared to a benchmark group comprised of college CNC and Machining and Welding students (*N*=32) enrolled in Fall 2013. The cohort groups for the Aerospace Program participants were tracked from Fall 2013 – Spring 2016.

Over the three-year grant period, 132 unique participants were served by the *Soaring to Success* grant program. The total number who have completed a grant-funded program of study were 85, including 39 incumbent workers that have completed a grant-funded program of study. The total number of participants retained in their program of study or other grant-funded programs were 11 at the end of Year 4; this value represents the current year only. An additional 15 were retained in another education program or programs, again this value represents only Year 4, and is not cumulative. A total of 3,719 credit hours were completed by 132 participants, resulting in 385 degrees or certificates earned. The

total number of participants earning certificates in less than one year was 84, the total number of participants earning participants earning certificates in greater than one year was 26, and the total numbers of participants earning degrees were seven. Institutional GPA data were not provided for all program participants. Data were available for 32 Aerospace Program participants, resulting in a relatively high overall GPA of 3.29/4.00.

The comparison group was similar to the Aerospace Program participants. As previously mentioned, comparison data were collected for the cohort of Welding Technology and Machining and CNC Technology that began in Fall 2013. Data were collected from 32 unique students in the cohort group. Incumbent status data was not available for comparison. Three students in the comparison cohort were retained in another education program or programs. A total of 1,635 credit hours were completed by 32 students, resulting in 47 degrees or certificates earned. The total number of students earning certificates in less than one year was 27, the total number of students earning certificates in greater than one year was 16, and the total numbers of students earning degrees were four. The institutional GPA for the cohort group was relatively high, 3.10/4.00.

The data collected from the Aerospace Program participants demonstrate the high levels of retention. Program participants earned from 1 to 7 certificates, with an average of 4.4 certificates earned by each participant. Table 5 presents data on the certificates earned by cohort group for the grant-funding period.

Table 5. Cohort Breakdown of Certificates Earned through Spring 2016

	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Summer 2015	Fall 2015	Spring 2016
Number of Participants	39	16	19	13	5	26	14
Core	37	11	16	8	2	3	--
Composite Fabrication	38	12	16	8	5	3	--
Composite Repair	32	8	13	5	2	2	--
Composite Technician	32	8	13	5	2	2	--
CNC	14	7	10	4	--	1	--
NDT	11	6	8	3	2	--	4
Advanced Technical Certificate	10	6	8	2	--	--	--
AAS	3	--	2	2	--	--	--
Elective	1	--	--	2	--	9	10
Incomplete	6	5	5	3	--	7	--
In-progress	--	--	--	1	2	8	--
Certificate Total	**177**	**58**	**86**	**37**	**13**	**11**	**4**

To be counted as an Aerospace Program participant, one was required to be an adult. The age distribution for the Aerospace and comparison cohort are markedly different, and can potentially be

attributed to the participant age requirement for the program, especially since the percentage values for the general NIC population closely mirror the comparison cohort group. Similar to the benchmark group, the Aerospace participants were generally white males. This is in contrast to the general population at NIC; while the majority of individuals enrolled at NIC identify as white (81%), females (62%). Overall comparison statements cannot be made about the enrollment status among the general institutional population, the comparison group, and the Aerospace participants, as status was reported as 'unknown' for most comparison students (*n*=29, 90.6%) and Aerospace participants (*n*=83, 62.9%). Complete demographic comparison of Aerospace Program participants, the benchmark group, and institution data are presented in Table 6.

Table 6. Demographic Comparison – NIC Aerospace and Cohort Groups

Demographic Information	Institution		Aerospace		Comparison Cohort	
Age*						
19 or Younger	2,171	39.1%	27	20.5%	11	34.4%
20-24 Years	1,384	25.0%	26	19.7%	7	21.9%
25-29 Years	624	11.3%	26	19.7%	1	3.1%
30-39 Years	700	12.6%	24	18.2%	5	15.6%
40-49 Years	357	6.4%	16	12.1%	4	12.5%
50-59 Years	171	3.1%	11	8.3%	3	9.4%
60 and Older	139	2.5%	2	1.5%	1	3.1%
Average Age	25.8		30.3		29.3	
Gender**						
Male	--	38%	115	87.1%	31	96.9%
Female	--	62%	17	12.9%	1	3.1%
Race**						
American Indian or Alaska Native	--	3%	6	4.5%	1	3.1%
Asian	--	1%	2	1.5%	--	--
Black or African American	--	1%	1	0.8%	--	--
Hispanic***	--	4%		0.0%		
Native Hawaiian or Other Pacific Islander	--	1%	--	--	--	--
White	--	81%	110	83.3%	26	81.3%
Two or More Races	--	0%	1	0.8%	--	--
Race/ethnicity Unknown	--	9%	12	9.1%	5	15.6%
Enrollment Status						
Full-Time	2,471	44.6%	35	26.5%	2	6.3%
Part-Time	3,075	55.4%	14	10.6%	1	3.1%
Status Unknown			83	62.9%	29	90.6%
Incumbent Worker Status						
Work either part-time or full-time	--	--	61	46.2%	--	--

*Age for Aerospace participants refers to age at time of initial enrollment at NIC.

**Institutional data obtained from National Center for Education Statistics in August 2016.

***Data reported by National Center for Education Statistics indicates Hispanic/Latino is categorized as a race. Whereas, NIC Aerospace project staff identify Hispanic as an Ethnicity. Thus total values for Aerospace participants may exceed 100.0%.

OEIE used the data collected by the Aerospace staff to develop an infographic, or graphic visual representation of the participation information. The infographic serves to display trends related to demographic data and program completion of Aerospace participants throughout the grant-funding period. See Appendix 5 to review infographic. Similar to other TAACCCT projects, North Idaho experienced difficulties obtaining wage data from those served by the grant. In an effort to provide an accurate value for increased wages for program participants, OEIE subtracted the original wage reported from the new wage reported, where possible. Participants were only included in the wage calculation if they had both original and new wage data. As well, if a program participant was identified as unemployed to begin the program, but is now employed, the original wage was determined to be $0.00.

Conclusions

Based on the college's experiences throughout the TAACCCT grant, the NIC Aerospace program identified the following successes, challenges and lessons learned.

Successes

Two strengths of the Aerospace Program, as identified by an employer partner were that participants are interested in working within the industry and understand the environment they will eventually be placed into, and participants bring the skill sets that employers are seeking resulting in decreased onboarding. Access to a pool of participants who are interested in the field is often associated with increased job retention and decreased turnover. Program graduates enter the workforce ready to work, "*we're not starting from scratch. They're already familiar with composite materials…so there's a reduction in the training time to get them up to speed.*"

The program design allowed participants to receive stackable certificates and specialized training to advance in the workforce, and potentially receive higher wages, as identified by an employer partner,

> *It* [the Aerospace Program] *certainly has met the final outcome of our goal which was to have access to a more skilled workforce specific to our industry. As an additional comment, we provide a higher wage to those coming into our employ than someone coming in without the program experience. We pay an additional $4/hour for graduated students who have completed the two-semester program. The increase alone pays the cost of program tuition within approximately five months, a great reason for prospective students to enroll.*

In fact, several area employers specifically recruit program participants and graduates based on the direct alignment with industry needs, "*Aerocet has hired six students through this program and interviewed many more. We continue to recruit from the talent pool from this program as our 'first choice' resource.*" The partner notes the following as reasons for continued recruitment of program participants: access to a broader pool for recruiting; reduced recruiting costs for entry-level aerospace positions; decreased on-the-job training time/cost; improved employee retention/reduced turnover; and access to training or upgrading skills for current workforce. Participants in the workforce had fewer deficiencies as a result of the training and education received through the Aerospace Program. These deficiencies were related to the volume of work on the job; potentially higher grade equipment that is

not used in the classroom due to expense; and some processes that are employer-specific. "*But the fact that they're getting the basics or beyond the basics of lay-up is s enough for us*."

Based on the surveys administered to program participants throughout the grant-funding period, the experiences for students have generally been positive and well-received. It is evident that the Aerospace project staff has changed the programs and courses based on student feedback and the input of other stakeholders. One project stakeholder commented,

> *We're trying to prepare people for a career so, unless we can adequately give them the building blocks to move into a career, then we're not really doing our job. And so the only way we are going to do that and to stay current in the industry is to work ourselves, at least part time.*

Prior to enrolling the program, participants consistently indicated their educational goal was to educational advancement. These goals are evidenced by reports of wanting to "Obtain a 2-year degree," to "Gain enough training to obtain employment," or to "Obtain a technical certificate (less than 2 years)." After participating in the program, former students reported the program prepared them for their current careers. Additionally, program participants felt confident to apply for a job in my field, have applied for a job in my field, increased confidence while in the workplace, and felt prepared to work in my field. Former participants also report that they have found a job in my field, received a promotion, and earned higher wages than before entering the program suggesting the program is meeting the needs of the participants.

In general, participants enrolled in the program continue to be satisfied with the project. Program participants largely agree that the program is well worth the time; is interesting; provides a clear route to a technical certification; and they would recommend the Aerospace Program to others. Specifically, NIC Aerospace students were satisfied with, and enjoyed the *program (course) content* and *hands-on experiences (labs)* aspect of the Aerospace Program, as well as program *instructors*.

- Program participants are taking advantage of partnerships with local business and industry. In fact, 76 (57.6%) students enrolled in the program are currently employed. Of these, 16 (12.1%) students are employed in industry-related positions. Based on student intake information, 61 (46.2%) students can be classified as incumbent workers.

One of the greatest successes of the project is the continued high program retention rate. One hundred thirty-two unique participants enrolled in the Aerospace Programs between Fall 2013 and Spring 2016. Participants were enrolled in at least one semester, and as many as four semesters. The average number of semesters enrolled for each participant was 2.2 semesters. As a result, 385 total certificates were obtained over the three years.

A success of the Aerospace program is the universal transfer of the skills obtained. Skills learned are often transferrable to other positions, like auto and boat mechanics. Employer partners have suggested that the skills leaned by program participants can transfer to any composite-related workplace. In fact, one administrator noted, "*We had [two] students start their own fiberglass business…that caters to the boating industry.*" In fact, in Year 2 of the project, program participants were invited to participate in the

creation of a full-scale H1 hydroplane hull mold, demonstrating the transferability of skills to different industries.

Throughout the lifetime of the grant, the Aerospace Program has worked with other departments and programs at the college to enhance integration. Specifically, the Aerospace Program is working to offer existing electives through other college departments, allowing the program to become more integrated on the NIC main campus.

As a result of the TAACCCT grant, the Aerospace Program sought to expand course offerings to include a helicopter and airplane pilot training program. The program is part of a 2-year Associate Degree, which will enable students to receive federal financial aid to relieve some of the program costs.

Partnerships with local industry have been a continued success of the project. The Aerospace Program is engaged in two-way conversation to understand the needs of local industry partners, as it helps in revision and modification of courses and curriculum. The Project Staff have indicated the possibility of future training opportunities designed to meet workforce needs, including non-credit courses in composites. An NIC administrator suggested the relationships with industry partners have resulted in greater influence when requesting funding from the state to sustain the Aerospace Program. That is, the positive interactions and continued support of industry has been helpful in demonstrating the need for the program at NIC. Specifically, industry supporters have encouraged the Governor to prioritize continued funding to the programs, including future expansion plans for the composites program and funding for a new CTE facility.

As previously mentioned, the Aerospace Program has and continues to receive donations of expired materials and equipment from private and commercial donors. Finally, when initially proposed, NIC requested letters of support from 10 aerospace companies. The request led company leaders to form the Idaho Aerospace Alliance. The Alliance has expanded to include partners throughout the state of Idaho, even attracting partners in Eastern Washington.

Challenges

Program faculty have reported several challenges related to teaching; challenges related to classroom management, students with disabilities, etc. In Year 2, faculty indicated their biggest challenge was related to "*learning to become a teacher and to develop something interactive*" and struggles with "*classroom management.*" In Year 4, the faculty have seemingly overcome challenges related to classroom management citing being able to identify compatible work groups. When faced with students with attendance problems, the instructors felt comfortable approaching those students to express the importance of attendance and classroom interaction. Another attempt to address leading the classroom is the realization of the importance of hands-on work and technical training. One faculty member reported, "*It's a hands-on program, so…you teach a little bit in the classroom and then you spend a lot of time using it out in the shop, in the lab*."

Aerospace faculty were also faced with additional challenges related to students with disabilities. Though it was a learning experience for the students and the faculty member, the challenge of teaching atypical students was overcome as expressed in the following:

> *I had one class in machining where I had 4 or possibly 5 people who were considered disabled. I had one guy who was legally blind. Another guy who had a major head trauma that he's recovering from. I had several other* [students with] *military-style head trauma…I worked in conjunction with…the disabled services group in the college…I learned a lot through it and we actually had a good time. And believe it or not, you can teach someone who is very much vision-impaired to run a CNC mill. He did very well.*

Other challenges for the Aerospace Program include the number of participants served and recruiting TAA-eligible individuals. The Project Staff worked hard to recruit participants, but fell short of meeting the targeted enrollment numbers, as proposed for the program. Not producing the proposed number of graduates can potentially be attributed to the time of grant-funding notification. That is, the Project Staff had to work to retrofit the aerospace facility, have courses and equipment approved, and provide access to financial aid for program participants. One administrator provided the following quote regarding recruitment of TAA-eligible individuals,

> *Although our initial data told us that there were that many people in our region that could meet that* [student enrollment] *goal, it didn't work out quite as intended…It wasn't for lack of trying…We really looked for every possible way we could get people interested because it's such a tremendous industry and the jobs really are good.*

Another potential reason that numbers were not met could potentially be that high school students could not be counted as program participants. The Aerospace Program has demonstrated the ability to recruit and retain high school students throughout the state of Idaho in the program pipeline, but could not count them as official program participants. As a result, NIC helped reached more individuals than those that can be counted as participants when reporting to the USDOL.

A repeatedly reported challenge faced by the project is related to timelines. An NIC administrator identified the main challenge related to timelines is that the NIC semester timeline does not sync with the USDOL. There have been obstacles related to accreditation of program curricula and the associated approval processes. Another approval process that has been challenging is related to the FAA; the final approval did not occur until 2015, allowing courses to commence in Fall 2016.

As a new program at the college, it was necessary to secure facilities and equipment, as well as develop and receive approval of curriculum. Hiring faculty and staff, and forming an Advisory Committee were essential prior to beginning classes in Fall 2013, too. Given the hiring of the initial Project Director in April 2013, this left only a few short months to achieve these tasks.

All costs associated with the Aerospace Program were not covered by the TAACCCT grant, causing additional challenges for the Project Staff. Specific costs identified include the lease of the ACE and the cost to retrofit the building to meet program needs; funding for faculty; and the purchase of training aids.

A major challenge experienced by the Aerospace Program is related to available space. With a growing program, there is a need for expansion. The current location where courses are taught, the ACE, does

not have the capability for the growth. A member of the Project Staff stated, "*… at our Advisory Committee meetings has expressed an interest in maybe pursuing the power-plant option for our airframe program, but with our current space, there's just no way we could do that. We really need…hangar space."* As well there is an indicated need for an additional classroom with computers available for program participants, and a need more and better office space for faculty. Finally, there is a need a separate conference room: currently using the student lunch room as a conference room (often standing-room only); advisory council meetings are held in classrooms, which makes scheduling difficult.

Furthermore, the distance between satellite and main campuses poses challenges for faculty, staff, and program participants. Faculty and staff have to figure commute time into their schedule to teach classes on both campuses or attend requirement meetings. The location of NIC with respect to the state capital, Boise, has been the cause of some challenges. Summer teaching seminars are held in the capital which makes it difficult for those who teach during the summer to attend, *"The summer training is always in Boise and we offer summer classes, so maybe something more locally [would be helpful]."*

Lessons Learned and Promising Practices

Several lessons learned have been identified by the Aerospace Program stakeholders. One such lesson is that when writing a grant, it would be helpful to examine the scope of the process. That is focus on one or two brand new programs, rather than try to get five new program areas up and running. Though the Aerospace Program was able to successfully launch all proposed programs, it may have been less stressful to have more narrowly focused outcomes for the grant. As well, it would be beneficial to focus on planning and curricular development during the first year of grant-funding, and implementation of courses during the second year of grant-funding. A faculty member indicated a desire for more planning and preparation time, as it would have been beneficial. "*It has been hard, but I'm not complaining. This is the best job I've ever had in my life."*

It is important to plan for growth of a program. While the project was successful in many aspects, it may have been overlooked as to what additional and future needs would need to be met. In the final year of the project, the program faced space needs. That is, the ACE is not large enough to store an airplane, unless it is dismantled prior to housing it inside.

In general, it is assumed that a 3-year timeframe is not long enough to assess the impact of the program on industry, that is, how well do students do as employees over time. For the *Soaring to Success* project, program participants are in the workforce, but there has not been enough time to assess the impact of the program on their success in the industry, given the high retention of the participants.

It has been universally noted by those associated with the Aerospace Program that it would behoove those seeking to launch an FAA program to begin the application process immediately. As noted previously, the Project Staff worked long and hard, through many iterations to achieve approval of the FAA part 147 program at NIC. Another struggle related to the FAA is a lack of a system for program data gathering *"We're struggling with our time management system for our FAA-approved airframe program. It's taking lots of man hours to track students' time and I guess if we had more money maybe we could find a better system."*

Another area of growth that is important to foresee is collaboration with college faculty and administration in terms of purchasing, receiving, replacing paperwork process with a credit (or purchase) card for small purchases, etc. It is important to think about time-use efficiencies, to not duplicate efforts (e.g., accessing electives in other departments rather than developing new courses).

The development of strong industry partnerships has provided NIC with a model for developing programs to serve other industries in the region (e.g., forestry, advanced manufacturing not related to aerospace). For the past decade, northern Idaho has been home to aerospace industries, which will likely lead to increased need, therefore program sustainability. One administrator cited,

> *From the very beginning, we made a commitment to ourselves and to business and industry that we needed to make this sustainable to continue to support that sector of the industry. And so we worked with the State to get approval for faculty positions.*

Appendices